VLASOV, K.B.; ISHMUKHAMETOV, B.Kh.

Equations of motion and state for magnetoelectric media. Zhur. eksper. i teor. fiz. 46 no.1:201-212 Ja'64. (MIRA 17:2)

1. Institut fiziki metallov AN SSSR.

ACCESSION NR: AP4012549

s./0056/64/046/001/0223/0231

Vlasov, K. B.; Filippov, B. N. AUTHORS:

TITLE: Rotation of ultrasound polarization plane in metals

in a strong magnetic field

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964,

223-231

TOPIC TAGS: ultrasonics, ultrasound polarization, polarization plane, metal ultrasound, plane rotation, magnetic field ultrasound, magnetically polarized metal, metal polarization, conduction tion electron, rotation constant, fermi surface

ABSTRACT: Singularities of the propatation and absorption of ultrasound in magnetically polarized metals whose conduction electrons have arbitrary dispersion are considered by quasiclassical theory at low temperatures, when the singularities are determined by the interaction between the ultrasound and the conduction electrons.

Card 1/32

ACCESSION NR: AP4012549

The value of the constant determining the plane of rotation of ultrasound polarization in a strong magnetic field (characteristic radius of cyclotron orbit smaller than electron mean free path and ultrasound wavelength) is determined. Estimates are made of the frequency, field, and angular dependences of the rotation constant for different types of Fermi surfaces. The field and frequency intervals in which this constant can be expressed in terms of the Hall constant, the electric conductivity, the deformation potential, or other characteristics, are established. The numerical maximum estimate for the constant of rotation is 10-4 rad/cm-Oe, which in fields on the order of 10 kOe yields a polarization plane rotation angle of about 1 radian when the wave travels 1 cm. "In conclusion, we are grateful to V. M. Kontorovich for supplying his results prior to publication." Orig. art has: 68 formulas.

ASSOCIATION: Institut fiziki metallov AN SSSR (Metal Physics Institute, AN SSSR)

Card 2/12.

ACCESSION NR: AP4009571

\$/0126/65/016/005/0801/0807

AUTHORS: Vlasov, K.B.; Filippov, B.N.

TITLE: Rotation of polarization plane and circular magnetic dichroism of ultrasound in magnetopolarized metals whose electrons of conductivity have quadratic dispersion law

SOURCE: Fizika metallov i metallovedeniye, v. 16, no. 6, 1963, 801-807

TOPIC TAGS: polarization plane, circular magnetic dichroism, ultrasound, magneto-polarized metal, quadratic dispersion law, elastic wave, deformation potential, Fermi surface

ABSTRACT: The authors compute the constant determining the rotation of the polarization plane of elastic waves and the relation of the axes of the ellipse giving rise to elliptical polarized elastic waves in magnetopolarized metals. The computations are made for a wide range of frequencies of ultrasound and constant magnetic fields. For this the deformation potential is studied. The authors find the range of frequencies and the field in which the rotation constant and the ratio of the axes of the ellipse are functions of the Fermi surface and the deformation potential.

Card 1/2

! •

ACCESSION NR: AP4009371

They show that in the case where the length of the wave of ultrasound, λ , is of the order of depth of penetration δ of the electromagnetic wave, the radius r of the cyclotronic orbit is of the order of length of the free run ℓ of an electron, $\ell \leq \lambda$, the ratio of the axes of the ellipse is maximized. Orig. art. has: 48 formulas.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals AN SSSR)

SUBMITTED: 01Jun63

DATE ACQ: 03Feb64

EMCL: 00

SUB CODE: PH

NO REF SOV: 005

OTHER: 002

2/2

EWT(1)/EWP(q)/EWT(m)/BDS/ES(s)-2 AFFTC/ASD/ESD-3/IJP(C)/SSD68 17615-63 Vlasov, K. B. and Filippov, B. N. Dynamic elasticity moduli, rotation of the polarization plane, The state of the s AUTHOR: and coupled longitudinal-transverse waves in magneto-polarized metals TITLE: Zhurnal eksperimental'noy i tekhnicheskoy fiziki, v. 44, no. 3, PERIODICAL: TEXT: In addition to the absorption of ultra sound in magneto-polarized media one 1963, 922-933 may expect the existence of the not yet observed effects of the rotation of the polarization plane or the existence of coupled longitudinal-transverse waves. Phonomenologically, these effects can be described by a dynamic elasticity modulus tensor (K. B. Vlasov, Ref. 6: FMM, 4, 543, 1957; V. P. Silin, Ref. 7: ZhETF, 38, 977, 1960). The present paper presents the derivation of a microscopic questclassical theory of these moduli for the case of metals in a constant magnetic field. The enstions of motion defining the features of absorption and propagation of elestic waves in magneto-polarized metals are derived for a broad frequency and constant magnetic field strength range and for arbitrary directions of propagation and magnetic field orientation using the free electron model. Explicit expressions Card 1/2

s/056/63/044/003/025/053

L 17615-63

Dynamic elasticity moduli...

for the dynamic modulus of elasticity components involved in the equations of motion are derived for the case of strong magmetic fields. The expressions are given in terms of the atomic constants, electron mean free path, ultrasound frequency, and magnetic field strength. Formulas for specific rotation of the polarization plane, ratio of the ellipse axes, and the component of the dynamic elasticity modulus defining the coupling constant of longitudinal-transverse or transverse-longitudinal waves have been obtained in terms of the cyclotron frequency Ω, ultrasound frequency and wave vector k, and velocity vo and mean free path 1 of conduction electrons on the Fermi surface. Monotonous increase of specific rotation with the growth of kl up to saturation and oscillations of the coupling coefficient with variations of kv_0/Ω due to geometric resonance are predicted. There are 2 figures.

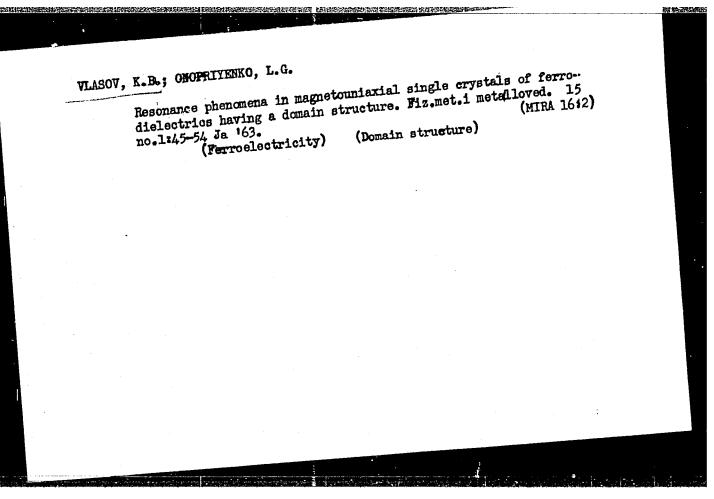
ASSOCIATION: Institut fiziki metallov Akademii nauk SSSR (Institut for the Physics of Metals of the Academy of Sciences USSR)

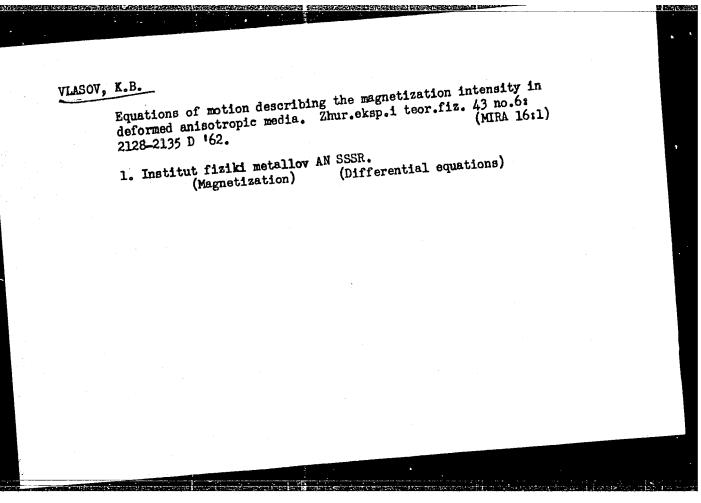
SUBMITTED:

July 18, 1962

Card 2/2

CIA-RDP86-00513R001860310002-0" APPROVED FOR RELEASE: 09/01/2001





VLASOV, K.B.; FILIPPOV, B.N.

Dynamic elasticity moduli, rotation of the polarization plane of elastic mayes, and coupled longitudinal-transverse waves in magnetically polarized metals. Zhur. eksp. i teor. fiz. 44 no.3:922-933 Mr 163. (MIRA 16:3)

1. Institut fiziki metallov AN SSSR. (Wayes) (Magnetic fields)

s/126/63/015/001/005/029 E039/E435

Vlasov, K.B., Onopriyenko, L.G.

AUTHORS:

Resonance effects in uniaxially magnetized single crystals of ferroelectrics possessing domain structure

PERIODICAL: Fizika metallov i metallovedeniye, v.15, no.1, 1963,

Resonance absorption of high frequency magnetic fields in ferroelectrics possessing domain structure has two regions of magnetic dispersion. One is due to uniaxial Larmor precession of the magnetization vector in the domain; the other is in a region of radio-frequency connected with the oscillatory motion of the These regions are examined for ellipsoidal samples of uniaxially magnetized single crystals in a constant magnetic field arbitrarily orientated in one of the principal planes of the An approximate solution of this problem is described, giving the dynamic properties of the boundary layer by introducing an effective mass per unit area of the boundaries. motion describing the behaviour of the magnetic system are obtained Lagrangian function is determined firstly for a single phase Card 1/2

S/126/63/015/001/005/029 E039/E435

Resonance effects ...

magnetization and then for a two phase magnetization system. The dependence of three natural frequencies are obtained from the magnitude and direction of the constant magnetic field with respect to the crystallographic axes. There are 2 figures.

ASSOCIATION: Institut fiziki metallov AN SSSR

(Institute of Physics of Metals AS USSR)

SUBMITTED: June 15, 1962

Card 2/2

VLASOV, F. B.; MITSEK, A. I.

Thermodynamic theory of materials presenting the possibility of the coexistence of ferromagnetism and antiferromagnetism. Part 1: Magnetization processes. Fiz. met. i metalloved. 14 (MIRA 15:10) no.4:487-497 0 162.

1. Institut fiziki metallov, Ural'skiy gosudarstvennyy universitet imeni A. M. Gor'kogo.

(Magnetization)

VLASOV, K. B.; MITSEK, A. I.

Thermodynamic theory of materials presenting the possibility of the coexistence of ferromagnetism and antiferromagnetism. Part 2: Temperature dependence of parameters determining magnetic conditions in the form of a magnetization curve. Fiz. met. i metalloved. 14 no.4:498-502 0 62. (MIRA 15:10)

l. Institut fiziki metallov AN SSSR i Ural'skiy gosudarstvennyy universitet imeni A. M. Gor'kogo.

(Thermomagnetism)

5/126/63/015/001/005/029 E039/E435

AUTHORS:

Resonance effects in unlaxially magnetized single crystals of ferroelectrics possessing domain structure Fizika metallov i metallovedeniye, v.15, no.1, 1963,

TITLE:

Resonance absorption of high frequency magnetic fields in ferroelectrics possessing domain structure has two regions of magnetic dispersion.

One is due to uniaxial Larmor precession of PERIODICAL: the magnetization vector in the domain; the other is in a region of radio-frequency connected with the oscillatory motion of the These regions are examined for ellipsoidal samples of uniaxially magnetized single crystals in a constant magnetic field arbitrarily orientated in one of the principal planes of the An approximate solution of this problem is described, giving the dynamic properties of the boundary layer by introducing boundaries. an ellective mass per unit area of the boundaries. Equations of motion describing the behaviour of the magnetic system are obtained an effective mass per unit area of the boundaries. Lagrangian function is determined firstly for a single phase from the "principle of least action". Card 1/2

Resonance effects ...

S/126/63/015/001/005/029 E039/E435

magnetization and then for a two phase magnetization system. The dependence of three natural frequencies are obtained from the magnitude and direction of the constant magnetic field with respect to the crystallographic axes. There are 2 figures.

ASSOCIATION: Institut fiziki metallov AN SSSR

(Institute of Physics of Metals AS USSR)

SUBMITTED:

June 15, 1962

Card 2/2

s/056/62/043/006/027/067 B112/B186 Vlasov, K. B. Equations of motion for magnetization in deformed anisotropic AUTHOR: TITLE: media Zhurnal eksperimental noy i teoreticheckoy fiziki, v. 43, no. 6(12), 1962, 2128 - 2135. PERIODICAL: TEXT: The magnetization M and the mechanical moment J are interrelated by (1) The general equations of motion are $\rho \frac{DI_l}{Dl} = [JH^*]_l + \lambda_{ll}H^*_l + D_{llkl} \frac{\partial^2 H^*_l}{\partial x_k \partial x_l},$ $D_{ijkl} = \frac{1}{2} \int (x_{i} - x'_{k}) (x_{l} - x'_{l}) \frac{1}{T} L_{ij}^{c} dr',$. (16) $H_{l}^{*} = \frac{p}{J^{3}} \left[\frac{DI}{Dl}, J \right]_{l} + \beta_{ll} p \frac{DI_{l}}{Dl} + D'_{ll|kl} p \frac{\partial^{2}}{\partial x_{k} \partial x_{l}} \left(\frac{DI_{l}}{Dl} \right),$ where $H^* = -\theta \phi/\theta I$, (6) $\lambda_{ij} = \lambda_{ij}^0 + \lambda_{ijkl}^M k^M l + \lambda_{ijklmn}^M k^M l^M l$ Card 1/2

Equations of motion for ...

S/056/62/043/006/027/067 B112/B186

 $\mathbf{L_{ij}^{c}} = \mathbf{T} \lambda_{ij} \delta(\mathbf{r} - \mathbf{r}^{i}), \quad \text{and} \quad \rho \frac{D\mathbf{I}}{Dt} = \rho \frac{d\mathbf{I}}{dt} - \rho \left[\dot{\mathbf{w}}\mathbf{I}\right] = \frac{\partial \mathbf{J}}{\partial t} + \frac{\partial}{\partial x_{k}} (\mathbf{J}\dot{u}_{k}) - [\dot{\mathbf{w}}\mathbf{J}],$

Under certain assumptions and approximations the equations (16) and (23) go over to the equations of Landau and Lifshits, Bloch, Gilbert and others.

ASSOCIATION: Institut fiziki metallov Akademii nauk SSSR (Institute of Metal Physics of the Academy of Sciences USSR)

SUBMITTED: April 29, 1962

Card 2/2

1:221:7

5/126/62/014/004/003/017 E032/E314

74,7300

AUTHORS:

Vlasov, K.B. and Mitsek, A.I.

TITLE:

On the thermodynamic theory of the existence of ferromagnetism and antiferromagnetism in matter. II. Temperature-dependence of parameters determining the magnetic state and the form of the magnetization

Fizika metallov i metallovedeniye, v. 14, no. 4, curve ! PERIODICAL:

The theory developed by the present authors in the previous paper (FMM, 1962, v.14, no. 4, 486) is used to discuss the temperature-dependence of quantities determining the form of the magnetization curves at points which would be the phasetransition points if the ferro- and antiferromagnetic sub-systems were isolated, i.e. the Curie point ®C for the ferromagnetic sub-system and the Neel point Θ_{M} for the antiferromagnetic An interaction of the form given by Eq. (1.4) of the preceding paper (c.f. preceding abstract) ensures that there Card 1/3 11 REE S/126/62/014/004/002/017 for Bit I

S/126/62/014/004/003/017 E032/E314

On the thermodynamic theory

is a single transition point $oldsymbol{eta}$. Two special cases are considered, namely, $\overset{...}{\oplus}_{C}\gg @_{N}$ and $\overset{...}{\oplus}_{C}<< \overset{...}{\otimes}_{N}$. In the first of these, it is shown that when the interaction between the subsystems is taken into account, then provided it is small, it is found that 1) is has no effect on the temperature-dependence of the spontaneous magnetization and the susceptibility, 2) when $M \neq 0$, antiferromagnetic order will appear and 3) the phasetransition temperature Will increase. It is shown in the second of the above two cases that: a) when the temperature is less than or equal to Ψ weak ferromagnetism appears in addition to the antiferromagnetic ordering; b) the form of the temperaturedependence of the antiferromagnetic-order parameter ℓ is not affected when the interaction between the sub-systems is taken into account in the form of Eq. (1.4) of the previous paper and c) the phase-transition temperature is increased and the character or the transition changes from the antiferromagnetic type to the ferromagnetic type. The paper is concluded with a review of the general implications of the theory with regard to the form of the magnetization curves. Card 2/3

P55F6

5/126/62/014/004/002/017 E032/E314

AUTHORS:

Vlasov, K.B. and Mitsek, A.I. On the thermodynamic theory of the existence of ferromagnetism and antiferromagnetism in matter.

TITLE:

I. Magnetization processes Fizika metallov i metallovedeniye, v. 14, no. 4,

PERIODICAL: 1962, 487 - 497

It has been suggested that the one-directional anisotropy observed in unordered Ni-Mn and Cu-Mn alloys can be explained by assuming the presence of ferro- and antiferromagnetic TEXT: states. For Ni-Mn alloys, which approach the stoichiometric composition of Ni Mn, it has been assumed that the unordered

(ferromagnetic) matrix contains regions enriched with Mn which are in the antiferromagnetic state (Kouvel and Graham, J. Phys. Chem. Sol., 1959, 11, No. 3-4, 220; Kouvel, J. Phys. Chem. Sol., 1961, 21, No. 3-4, 220; Kouvel, J. Phys. Chem. Sol., 220; Kouvel, J. Phys., 220; Phys., 1961, 21, No. 1-2; Volkenshteyn and Turchinskaya, Doklad na Soveshchanii po nizkim temperaturam (Report on Conference on Low Temperatures], Kiev, 1961]. It is noted that it is not clear whether these regions are crystallographically separated from the Card 1/5 4/4.

S/126/62/014/004/002/017 E032/E314

On the thermodynamic

A thermodynamic theory is now developed for the description of these phenomena. It is assumed that the magnetic matrix. material can be regarded, on the zero-order approximation, as a combination of a ferromagnetic (or ferrimagnetic and antiferromagnetic sub-system. Large exchange interactic within each subsystem give rise to the ordering of the magnetic a ments. The exchange and magnetic interactions between the sub-systems, the magnetic interaction within each system, the interaction of each subsystem with the external magnetic field and the possible resulting nonuniformity of the magnetic moments are looked upon as perturbations. The analysis is confined to the case where antiferromagnetic sub-systems may be regarded as consisting of two magnetic and \underline{M}_2 $(|\underline{M}_1| = |\underline{M}_2| = \underline{M}_0)$. sub-lattices with magnetizations $\underline{\underline{M}}_1$ The thermodynamic potential due to the departure from the zero-

order state is then given by: $\underline{\tilde{\Phi}} = \frac{1}{V} \left(\underline{\tilde{\Phi}}(\underline{r}) d\underline{r}; \quad \underline{\tilde{\Phi}}(\underline{r}) = F(\underline{r}) - (\underline{M} + \underline{m})\underline{H} \right)$ (1.1)

Card 2/5

S/126/62/014/004/002/017 E032/E314

On the thermodynamic

where \underline{M} is the magnetization of the ferromagnetic sub-system

$$\underline{\mathbf{m}} = \underline{\mathbf{M}}_1 + \underline{\mathbf{M}}_2; \quad \underline{\mathbf{1}} = \underline{\mathbf{M}}_1 - \underline{\mathbf{M}}_2$$

and F(r) is the sum of 1) the increase in the free exchange energy due to the perturbation, 2) the free energy of irregularities and 3) the crystallographic free energy of magnetic anisotropy. The present theory is more general than that of Meiklejohn and Bean (Phys. Rev., 1957, 105, 904) because in the expression for the exchange energy of ineteraction between the sub-systems

$$E_{B3} = -(2M_sM_o)^{-1}\{C(\underline{M1}) - D.(\underline{mM})\}$$
 (1.4)

where M_s is the spontaneous magnetization, it is not assumed that D = -C. The general problem is therefore to vary the thermodynamic potential in order to find the equilibrium values of M_s , M_s and M_s for each value of M_s and thereby obtain the magnetization curve. In general, the problem is rather difficult Card M_s

S/126/62/014/004/002/017 E032/E314

On the thermodynamic

and therefore only special cases are considered in this paper. The analysis of special cases is based on the following expression for the thermodynamic potential

$$\hat{\Psi} = \hat{\Psi}_{0} + B\cos^{2}\eta + B\cos^{2}\Psi - C\cos(\psi - \eta) - M_{s}H\cos(\eta - \omega) - \frac{1}{2} \left\{ \chi \| \cos^{2}(\Psi - \omega) + \chi \| \sin^{2}(\Psi - \omega) \right\}$$
(2.1)

where χ_{\perp} and χ_{\parallel} are the two susceptibilities of the antiferromagnetic sub-system and η , ψ and ω are the angles of \underline{M} , $\underline{1}$ and \underline{H} with the z-axis. The equilibrium values of η and ψ are determined from the condition that ψ should be a minimum and it is then found that the solutions may be divided into two classes, namely, q < 1 and q > 1, where $q = C/2 |B| \setminus 1$. The analysis applies both to uniform and nonuniform (domain structure) distribution of the parameters characterizing the degree of magnetic order. Processes involving the rotation of the spontaneous magnetization vector and the antiferromagnetic vector $\underline{1}$ in each Card 4/5

 Un the thermodynamics

5/126/62/014/004/002/017 E032/E314

domain are discussed. The properties of the domain structure and displacement of domain boundaries are also analysed. In the case of a magnetically uniaxial crystal with domain structure in the initial state and q < 1, the displacement of the boundaries is inhibited and when the field is parallel to the anisotropy axis the displacement begins only at fields of the order of $H_{\mathbf{s}}$, where

 $H_{s} = Hs0/(1 - q^{2});$ $H_{s0} = (C/M_s)$

For other orientations of the field the displacement of boundaries should begin at even higher fields. Rotation processes should appear at fields of the order of H and prallel to the

anisotropy axis. They also occur at much smaller fields for other orientations. There are 2 figures.

ASSOCIATION:

Institut fiziki metallov (Institute of Physics of

Ural'skiy gosudarstvennyy universitet im. A.M. Gor'kogo (Ural State University im. A.M. Gor'kiy)

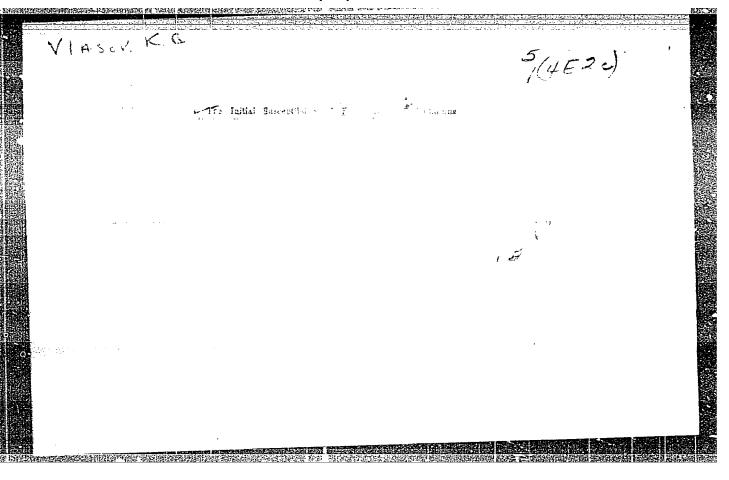
SUBMITTED: April 19, 1962

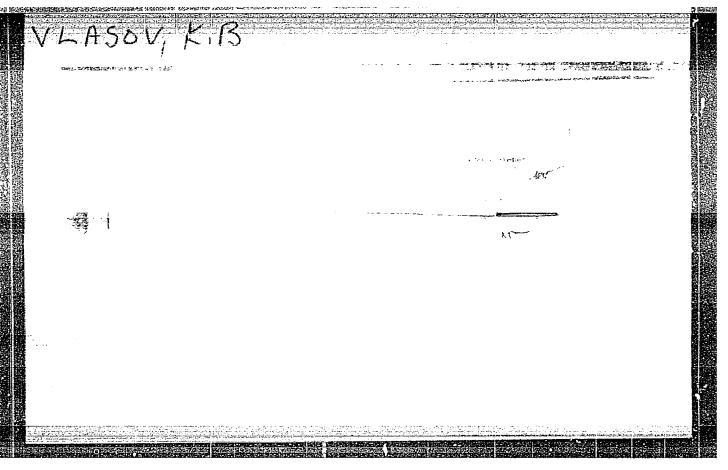
Card .5/5

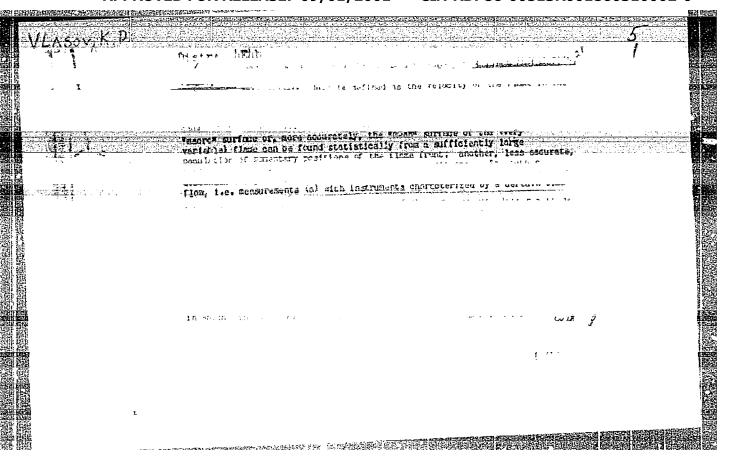
VLASOV, K.B.; ISHMUKHAMETOV, B.Kh.

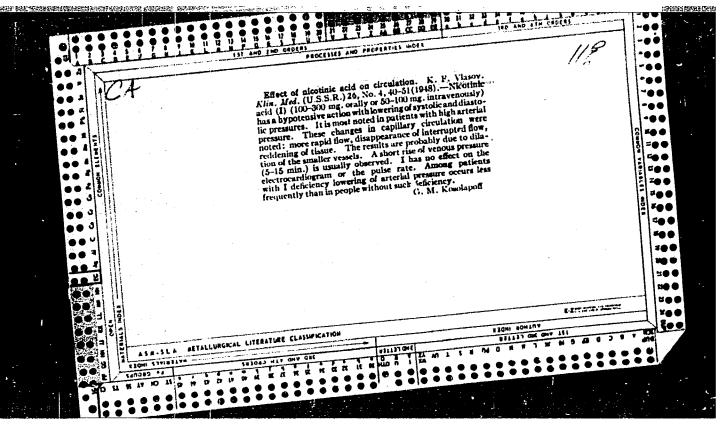
Quasi-static properties of ferromagnetic materials Maying an anisotropy of the effective spectroscopic splitting factor in areas of large magnetic fields. Fiz. met. i metalloved. 12 no.2:161-169 Ag '61.

1. Institut fiziki metallov AN SSSR. (Perromagnetism) (Anisotropy)









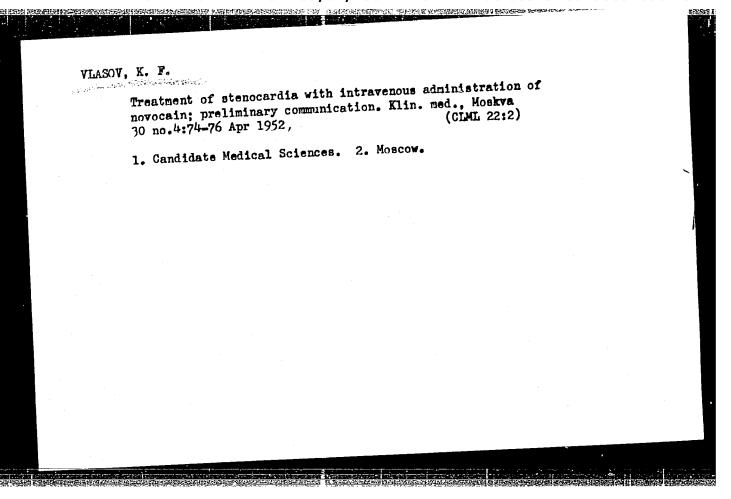
VIASOV, K.F.

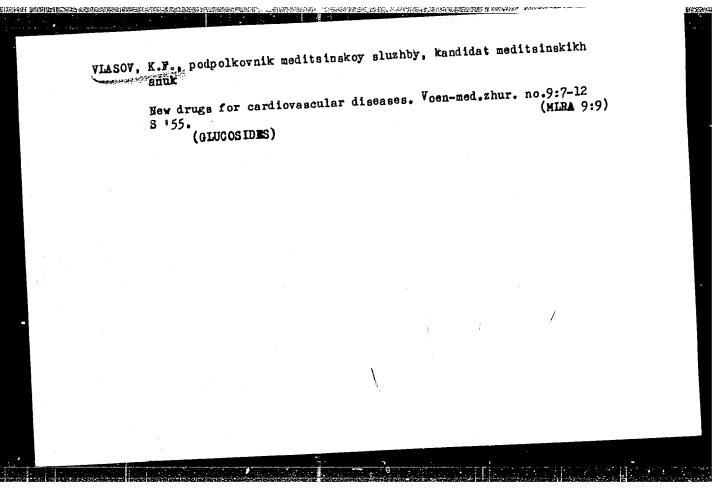
Dissertation; "Effect of Nicotinic Acid on Blood Circulation."

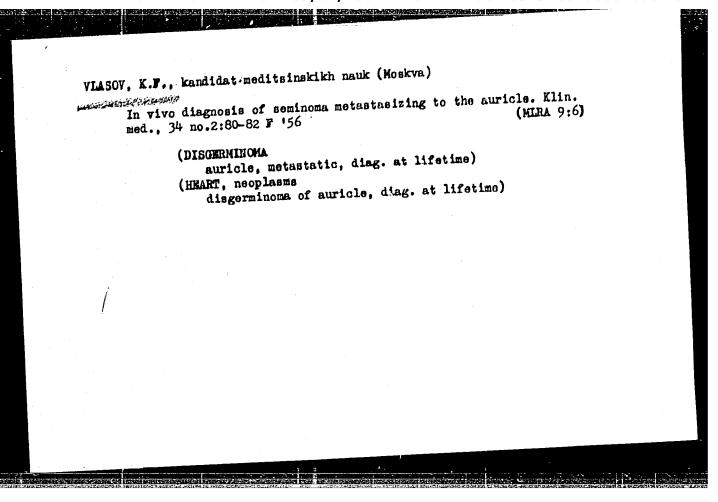
10 May 49

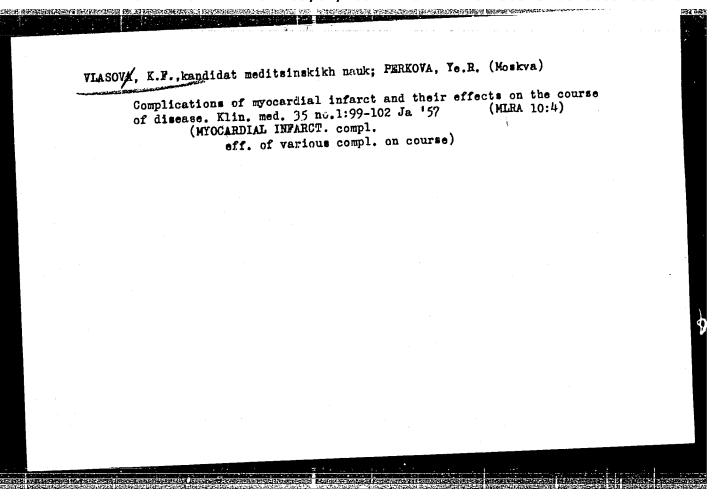
Central Inst for the Advanced Training of Physicians

SO Vecheryaya Moskva
Sum 71





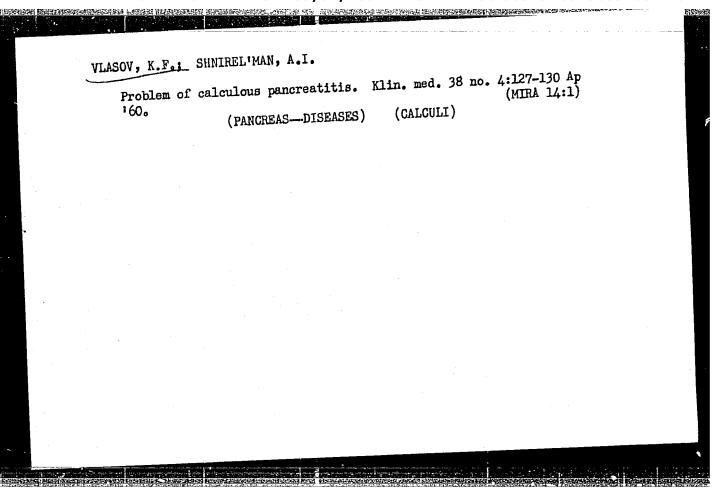


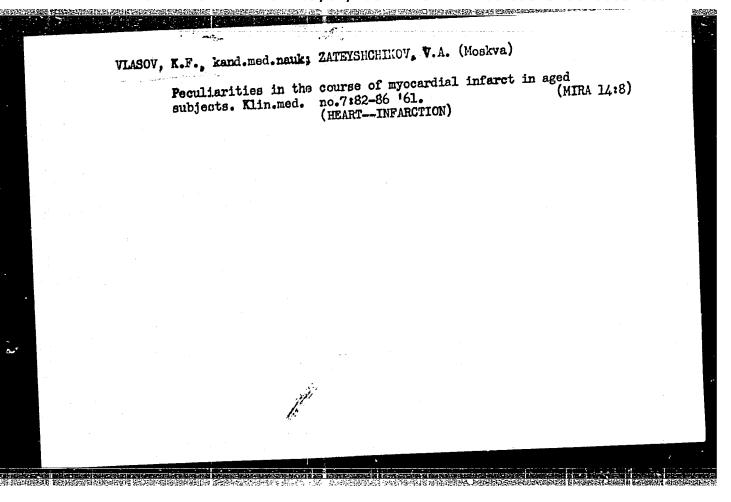


```
VIASOV, K.F., kendidat meditainskikh nauk

Liver insufficiency in acute thyrotoxicosis. Klin.med. 35 nc.5:
    [147-149 My '57.

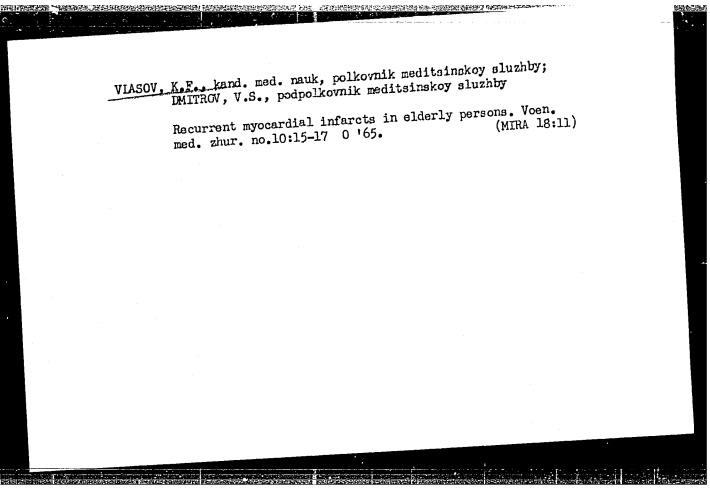
1. Iz TSentral'nogo voyennogo Krasnoznamennogo gospitalya imeni
P.V.Mandyka (nach. N.M.Navykiy)
    (HYPKRTHYROIDISM, compl.
    hepatitis)
    (HEPATIFIS, etiol. and pathogen.
    hyperthyroidism)
```





	VLASOV, K. F., kand. med. nauk (Moskva) Emergency measures in acute gastriperesis (uncontrollable vomiting) in patients with myocardial infarct. Klin. med. no.11:139-141 (MIRA 14:12) 161. 1. Iz TSentral'nogo voyennogo krasnoznamennogo gospitalya imeni	
	P. V. Mandryki (Mach 2002-2007-2007) (VOMITING)	
	(STOMACH-DISEASES)	
•		
٠		
		ojana (• we

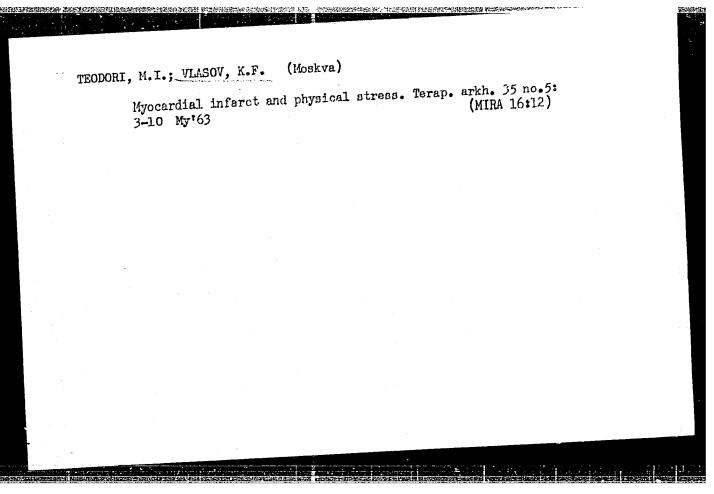
WLASOV, K.F., kand.med.nauk (Moskva) Hemorrhagic pancreatic necrosis as a thromboembolic complication in myocardial infarction. Klin.med. 40 no.6:129-130 Je '62. (MIRA 15:9) 1. Iz TSentral'nogo voyennogo krasnoznamennogo gospitalya imeni P.V. Mandryka. (HEART—INFARCTION) (EMBOLISM) (PANCREAS—NECROSIS)

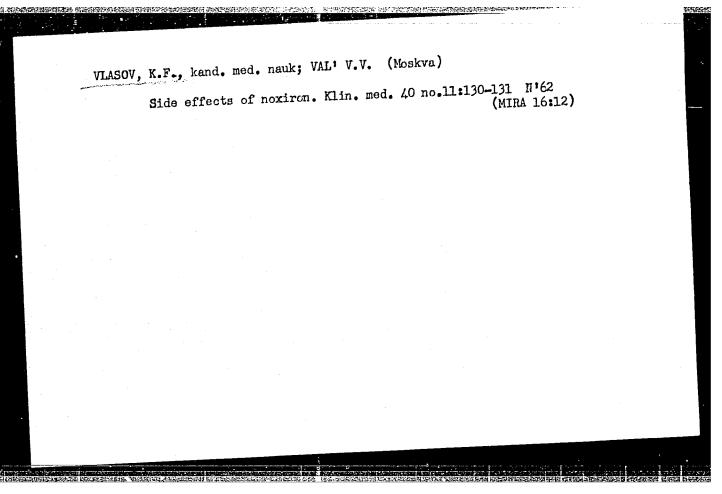


VLASOV, K.F., kand.med. nauk; SHUL'TSEV, G.P., doktor med. nauk; DMITROV, V.S. (Moskva)

Intramuscular administration of strophanthin and corglycon in circulatory insufficiency in patients vith coronary disorders. (MIRA 17:1) Sovet. med. 26 no.5: 18-22 My 63

1. Iz TSentral'nogo voyennogo Krasnoznamennogo gospitalya imeni P.V. Mandryka (Nachal'nik zasluzhennyy vrach RSFSR N.M.Nevskiy).





VLASOV K.P.

24-8-22/34 AUTHORS: Vlasov, K.P. and Kokushkin, N.V. (Moscow).

On errors of measuring the flame temperature in a flow by means of thermocouples. (Ob oshibkakh pri izmerenii temperatury plameni v potoke pri pomoshchi termopar). TITLE:

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk" (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.8, pp.137-141 (U.S.S.R.)

ABSTRACT: An investigation is made of the measurement of the gas temperature in the flame of a gasoline-air mixture inside a turbulent flow by means of gas analysis and by means of thermocouples. Comparison of the temperature obtained by these methods indicates that, in most cases, the temperature values obtained by thermocouples are higher than the average temperature. One of the authors established in earlier work (1), using low inertia instruments, that in the combustion zone of a turbulent flame the temperature in some points may vary between a minimum and a value corresponding to full combustion; the average frequency of the temperature changes under industrial conditions for a flame speed of 50 m/sec may reach 1000 c.p.s., whilst the relaxation period of the welded thermocouple of 0.5 mm is 2 to 3 sec. In addition to theoretical investigation Card 1/3

24-8-22/34

On errors of measuring the flame temperature in a flow by means of thermocouples. (Cont.)

of the problem, experiments were carried out consisting in displacing the thermocouples rapidly from the turbulent zone of the flame to the zone of meeting of the cold and hot mixtures, whereby the displacement time was many times lower than the relaxation time of the thermocouple; the transient process was recorded by means of a loop oscillograph. Furthermore, analogous experiments were made consisting in placing the thermocouple alternately into a hot air stream mixed with the combustion products and in a It was found that under conditions of turbulent combustion, when there is a fluctuation of the temperature in the given point with time, the drop of the temperature of the thermocouple joint is lower than the temperature rise and this will inevitably lead to an increase of the readings of the thermocouple relative to the real average temperature. A qualitative evaluation of this increase can be effected only if the law of rise and fall of the temperature of the thermocouple joint is known. Measurement of the temperature in the flow of a hot gasolineair mixture by means of thermocouples and by means of gas gas analysis does show that there is a difference in the

Card 2/3

24-8-22/34

On errors of measuring the flame temperature in a flow by means of thermocouples. (Cont.)

obtained results; measurement by means of thermocouples yields temperature values which are 150 to 250 C higher for a temperature of 700 C as compared to the values obtained by gas analysis. The greater temperature values measured by thermocouples as compared to the average temperature is by thermocouples as compared to the average temperature is attributed to chemical reactions taking place at the joint of the thermocouple.

There are 6 figures and 4 Slavic references.

SUBMITTED: January 22, 1957.

AVAILABLE: Library of Congress

Card 3/3

EARLY CONTRACTOR REPORT AND AND ADDRESS OF THE ADDR

PA - 2130 On the Question of the Method of Determining the Turbulent AUTHOR: Velocity of the Propagation of Flames. (K voprosu o metode opredeleniya turbulentnoy skorosti rasprostraneniya plameni, TITLE: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 2, pp 338 - 344 (U.S.S.R.) PERIODICAL: Received: 3 / 1957 The present stage of development does not make it possible to obtain quantitative relations between the turbulent velocity ABSTRACT: of combustion and the gasodynamic and physical-chemical characteristics of an induction mixture. According to the author's opinion an accurate definition of the conception of the turbukent velocity of flame propagation would at first be necessary. Not one of the hitherto known practical methods of determination is accurate. Essential difficulties are caused by the practical determination of ut (turbulent velocity of the propagation of

flames). In the present work possible methods of an experimental determination of flame boundaries in a turbulent flow are investigated. They are devided into two groups: 1. Measurements with the help of inertialess devices, and 2. Measurements with with the help of devices, which average their recordings according the help of devices, which average their recordings according to time. The first group comprises: a) Measuring of the ionization current in the flame, b) the rapid photography of the optical

Card 1/3

PA - 2130

On the Question of the Method of Determining the Turbulent Velocity of the Propagation of Flames.

dissimilarities or self-luminescence of the torch. The second group comprises: a) Photographing the torch by long exposure, b) Measuring of the temperature of the flame, c) Analysis of the gas. d) Measuring of the total pressure within the combustion zone. The most essential disadvantage of inertialess measuring methods is the impossibility of determining the average static boundaries of the flame. The lower the depth of the torch, the more accurate results are obtained by the method of rapid photomore accurate results are obtained by the method of the graphy. This accounts for the high accuracy of the method of the ionization donor. There follows a somewhat more detailed examination of the ionization method.

For the determination of the averaged boundaries of the flame a method was applied which is based on the following: a series of instaneous photographs of the distribution of the ionization current in the cross section of the flame torch were taken and statistically worked out. For this purpose the ionization donor had to pass through the flame torch that moment, at which the ionization current was fixed rapidly at the oscillograph. In order to be able to check the accuracy of the recordings of the

Card 2/3

On the Question of the Method of Determining the Turbulent
Velocity of the Propagation of Flames.

ionization donor, silhouettes of the flame torch were photographed simultaneously by means of a motion-picture camera.

(6 illustrations).

ASSOCIATION: Not given.
PRESENTED BY:
SUBMITTED: 26.3.1954
AVAILABLE: Library of Congress.

Card 3/3

3/124/61/000/005/019/032 25332 A005/A130

11.7200

AUTHORS:

Vlasov, K. P., Kokushkina, N. V.] Experimental investigation of the combustion zone of a turbulent

flame (Addition to the report of Ye. S. Shchetnikova) TITLE:

Referativnyy zhurnal, Mekhanika, no. 5, 1961, 92 - 93, abstract 5B561.

PERIODICAL:

(V sb.: Goreniye v turbulentn. potoke. Moscow, AN SSSR, 1959, 51 - 57)

See the report in: Sb.: Goreniye v turbulentn. potoke. Moscow, AN SSSR, 1959, 5 - 50. - RZhMekh, 1961, 28503. - In order to study the structure of the combustion zone, the authors carried out low-inert measurements of the ionized stream in a turbulent flame from a flat burner (350 - 200 mm) with stream velocities ranging from 8 to 45 m/sec, values of of from 0.6 to 1.5, and a temperature of the prepared mixture of about 160°C. The flame tongue was kept 10 mm wide behind the channeled stabilizer. The ionization feeler and the recording apparatus allowed recordings without signal distortions with frequencies up to 6 - 8 kc. Oscillograms were taken of the ionization current when the feeler was placed at various points of a fixed cross section of the flame tongue. The ionization current ous points of a fixed cross section of one frame tongue. The fontzation current versus time curves show different "splash" amplitudes; all minima correspond to

Card 1/2

2,333

S/124/61/000/005/019/032 A005/A130

Experimental investigation of the...

the initial mixture, but it was not feasible to determine sections with an ionization corresponding to combustion products. Processing of the oscillograms revealed that the ionization "splashes" are caused by gas volumes with dimensions in the range from 3 - 4 mm to 60 - 80 mm. The linear dimensions of these volumes vary little with stream velocity and depth of immersion of the feeler into the flame tongue (within the combustion zone), while the frequency of their appearance increases linearly with increasing stream velocity. In the author's opinion, it is easier to explain the experimental results from the viewpoint of the volume pattern of turbulent combustion than from the viewpoint of the surface pattern, but the problem of the existence of laminar fronts in the turbulent flame tongue which are widened by fine-scale turbulence is not yet solved.

A. Istratov

H

[Abstracter's note: Complete translation]

Card 2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860310002-0"

VIASOV, K.P.; INOZEMTSEV, N.N.

Effect of initial parameters of a flew en turbulent flame
velecity of homegenesus fuel-air mixtures. Izv. vys. ucheb. gav.;
velecity of homegenesus fuel-air mixtures. Izv. vys. ucheb. gav.;
av.tekh. 2 no.1:38-45 '59.

1.Moskevskiy aviatsiennyy institut, Kafedra teplevykh dvigateley.
(Cembustien)

24,5400

11 (1) AUTHOR:

Vlasov, K. P.

68784 5/170/59/002/12/014/021 B014/B014

TITLE:

In Connection With the Determination of the Width of the Combustion Zone of a Turbulent Flame

PERIODICAL:

Inzhenerno-fizicheskiy zhurnal, 1959, Vol 2 Nr 12; pp 87-85 (USSR)

ABSTRACT:

By way of introduction the author presents a critical analysis of the results hitherto obtained by determining the width of the combustion zone. Three relations are given for the approximate calculation of the width (Refs 4, 5, and 10). Several authors (Refs 7 and 9) believe that width is greatly influenced by turbulence. Some factors interfering with the determination of width are enumerated, after which the action of turbulence on the combustion is explained using K. I. Shchelkin's physical model. Experimental values are graphically represented in the diagram of figure 1, which shows the dependence of the width on the distance from the source of ignition. This dependence is illustrated by an approximate curve. There are 1 figure and 11 references, 10 of which are Soviet.

Card 1/1

SOV/24-59-3-15/33

AUTHOR: Vlasov, K. P. (Moscow)

The Connection Between Values of Flame Temperature, Measured TITLE:

by Optical and Other Methods

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1959, Nr 3, pp 100-103 (USSR)

ABSTRACT: A number of investigations have shown that optical methods indicate higher temperatures in the combustion zone of a turbulent flame than do other methods. The explanation of this effect was given in Ref 1, where it was shown that the temperature fluctuations at a point cause the optical methods to indicate a higher temperature than that corresponding to the time average value. In the present paper the application of optical methods (spectral line reversal and infra-red pyrometry) to the measurement of turbulent flame temperature is discussed and a connection found between the thermodynamic temperature and the temperatures measured optically. It is also possible from measurements of combustion temperature made by the spectral line reversal method to compute the mean square value of the pulsating temperature caused by the inadequate micro-mixing of heat and air which often occurs in ordinary technical equipment. There are 3 figures, 1 table and 2 Soviet references.

SOV/96-59-9-18/22

AUTHOR: Vlasov, K.P. (Candidate of Technical Sciences) The Measurement of Flame Temperature by Optical Methods TITLE:

PERIODICAL: Teploenergetika, 1959, Nr 9, pp 87-89 (USSR)

ABSTRACT: It has been found that measurement of flame temperature by optical methods usually gives high results as compared with other methods. This has been attributed to large temperature variations with time in the flame. Thus the instrument measures not the mean temperature but the mean energy of radiation. The point is confirmed by consideration of Eq (1). However, accurate values of mean temperature can be derived from optical measurements. In Fig 1 graphs are plotted of experimental and theoretical temperature profiles across the section of a turbulent flame and it is seen that the optically determined values are all high. The inverse problem is then put of determining the true temperature from the opticallymeasured values and Eq (5) is introduced. The results are plotted graphically in Figs 2 and 3 and it will be seen that the calculated and experimental values are in This method of correcting the readings

good agreement. of optical instruments is accordingly recommended.

SOV/96-59-9-18/22

The Measurement of Flame Temperature by Optical Methods

It is also shown that for certain compositions of fuel mixture the values of combustion temperature determined optically across the axis of a flame are too high, and this is attributed to variations in the fuel mixture composition with time.

Card 2/2 There are 3 figures and 3 references, 2 of which are Soviet and 1 English.

CIA-RDP86-00513R001860310002-0 "APPROVED FOR RELEASE: 09/01/2001

67818

SOV/115-60-1-18/28

24.3300

Vlasov, K.P.

AUTHOR: TITLE:

Errors in Temperature Measurements of Turbulent

Flames by Optical Methods

PERIODICAL:

Izmeritel'naya tekhnika, 1960, Nr 1, pp 40-44 (USSR)

ABSTRACT:

The author discusses the results of previous experimental work /Ref 1, 27 in which he participated and mental work /Ref 1, 27 in which he participated and makes a brief review of other data /Ref. 37. In his experiments, /Ref. 27 spectrum line inversion (of experiments, /Ref. 27 spectrum line inversion (of sodium or other metals) and infrared pyrometers were used. Details of the experimental techniques and given. For measuring flame temperature an "OFO" device was used in conjunction with an infrared brightness pyrometer. The optical systems of the instruments are shown in two diagrams (Fig 2, 3). The gas analysis method and a platinumrhodium-platinum thermocouple were also used. It is concluded that:

Card 1/3

67818 SOV/115-60-1-18/28

Errors in Temperature Measurements of Turbulent Flames by Optical Methods

1) The discrepancies in temperature values measured by optical as opposed to other methods can be explained by theoretical consideration of the optical measurements giving mean temperature values, assuming that temperature fluctuations in the flame follow the law expressed by

$$t = T_2P_2 + T_1(1 - P_2);$$

2) Overstatement of the adiabatic combustion temperatures along the axis of the flame tongue, where combustion was completely finished at fuel composition $\angle 20.8 - 1.1$, can be explained by temporal fluctuations of the mixture, but a marked share of heterogeneity (P_2) has also to be supposed.

Card 2//3

67818 SOV/115-60-1-18/28

Errors in Temperature Measurements of Turbulent Flames by Optical Methods

3) The analysis shows that in principle, it is possible to calculate the true temperature value by the measured values of the optical temperature. There are 2 diagrams, 4 graphs and 3 references, of which 2 are Soviet and 1 English.

Card 3/3

31303 S/124/61/000/010/038/056 D251/D301

11.7430

Vlasov, K.P. and Inozemtsev, N.N.

TITLE:

Investigating ionization in laminar and turbulent

streams

PERIODICAL:

Referativnyy zhurnal. Mekhanika, no. 10, 1961, 89, abstract 10 B630 (V sb. 3-e Vses. soveshchaniye po

teorii goreniya, v. 1, M., 1960, 60-71)

TEXT: Experimental measuring of the ionization of propaneair and benzo-air flames was carried out by means of a diodal sensor in the form of a two-channel ceramic with fixed receiver-electrodes. The ceramic served as an insulator, the electrodes touched the particles of the flame only with their end surfaces. The ionization current was amplified by a single-valve amplifier and then applied to the intake of the amplifier of a cathode impulse oscillograph to the intake of the sensor was moved by hand in the flame with a velocity of 1-2 m/sec or else pneumatic streaming of the flame was applicated.

Card 1/3

X

31303 S/124/61/000/010/038/056 D251/D301

Investigating ionization...

ied to the sensor with a velocity of 10-20 m/sec. The outer diameter of the ceramic was 1 mm for a laminar flame and 3 mm for a turbulent flame. The investigation showed that in all cases the speed of ionization was proportional to the speed of chemical reaction. The concentration of electrons directly behind the flame front is approximately 500 times less than in the front itself. With α = 0.9 and the pressure p = 1 atm, the concentration of electrons in the front of a laminar flame is approximately 2×10^7 cm⁻³. In the turbulent flame a wide zone of non-equilibrium ionization was discovered, within which bumps of the ionization current occur. On increasing the pressure from the stabilizer, the breadth of this zone increases, but the height decreases. The maximum ionization in the turbulent flame is 10 times less than in the laminar flame, other conditions being equal. Detailed investigation of the ionization showed that in the turbulent flame there are no laminar fronts, self-ignition and combustion proceed within the wide zone of chemical reaction in discrete foci-moles having various dimensions. The position of the front boundary of the zone of reaction in these experiments depended

Card 2/3

THE CHARLEST STREET OF THE PROPERTY OF THE PRO

31303 S/124/61/000/010/038/056 D251/D301

Investigating ionization...

only upon the initial parameters of flow. The authors present the turbulent flame as created from the zone of heating where there is intensive mingling of the products of combustion with the active mixture, the zone of chemical reactions, and the zone of the products of combustion with partial burning. In conclusion it is deduced that in the turbulent flame, the definitive processes are turbulent diffusion, kinetics of the chemical reactions and the temperature.

Abstracter's note: Complete translation

X

Card 3/3

s/147/60/000/01/012/018 E022/E535

265000

Vlasov, K. P. (Moscow) AUTHOR:

On the Solution of a Simple Combustion Chamber

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya

tekhnika, 1960, Nr 1, pp 104-110 (USSR)

ABSTRACT: The usual practice for obtaining the solution of a simple

 γ combustion chamber is to determine the extent of the flame, the pressure gradient and the deviation from the complete combustion along the chamber assuming a point burner, a homogeneous mixture and constant intensity (E) as well as scale (ℓ) of the turbulence. This approach presents some difficulties in obtaining the final solution; among other reasons this is due to the uncertainty about such parameters as the velocity of the flame spread (U_{Υ}) , the width of the zone of combustion (δ_{T}) and the time of combustion (τ). Recent experimental investigations (Refs 5 and 6) indicate that the width of the zone of combustion depends strongly not only on the distance (x) of each cross-section from the burner but also on the

Card 1/5 diameter (d) of the combustion chamber, i.e. on the

5/147/60/000/01/012/018 E022/E535

On the Solution of a Simple Combustion Chamber

relative distance $\bar{x} = \frac{2x}{3}$. Also, following Shchelkin's model of combustion, the width of the zone of turbulent combustion is determined by the depth of the deformations of the flame boundary (these deformations, caused by pulsations of the flame tongue are dependent on the mean static dislocation (o) of the flame element). Thus $\delta_T \sim \sigma$, and, as shown by Scurlock and Grover (Ref 7) o can be determined, Eqs (a) or (b), p 105. The manner of the temperature and velocity variation across the flame mantle can be found, if the fluctuation of the turbulent flame front is assumed to obey the Gauss law (Ref 8). In this case the time mean temperature will vary linearly at the depth $\delta_{T} \simeq$ and so will the velocity. With the symbols as used by A. V. Tantalov (Ref 1) and for the case of cylindrical combustor the following parameters are then sought: u_c , τ_c - the dimensionless velocity and the

temperature, respectively, of the fresh mixture, Card 2/5

S/147/60/000/01/012/018 E022/E535

THE STATE OF THE PROPERTY OF T

On the Solution of a Simple Combustion Chamber

 u_n , τ_n - the dimensionless velocity and the temperature of the products of combustion, p_n - pressure and η_c , η_n - the ordinates of the starting point of the flame front and the end of the zone of combustion respectively. Suffix '3' denotes parameters inside the zone of combustion. Employing the usual equations of energy, conservation of mass, momentum, and the relation of Eq (1) (see Ref 10), Eqs (6) and (7) are eventually derived. Δx being the distance between any two consecutive cross-sections of the flame mantle. Fig 1 represents the theoretical relationship between $\bar{\sigma} = 2\sigma/d$ and \bar{x} obtained from these relations. The experimental data for the case of the open flame in the cylindrical combustor agree very well with the curve, hence o may be taken from this graph. Next the results of this computation are compared with the analysis of Tantalov (Ref 1); this is shown in Fig 2. The forward boundary of the flame front is almost identical in both cases, but the rear boundary differs fairly

Card 3/5

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860310002-0"

S/147/60/000/01/012/018 E022/E535

On the Solution of a Simple Combustion Chamber

substantially. This can be explained by the fact that by and to are evaluated differently in these two methods. The figure also shows clearly the effect of the control of the result: curves 3 having unchanged differ the substantially from the previous curves (2). Therefore, some experiments were carried out for determining the dependence of unchanged on the fundamental parameters of the dependence of unchanged had a diameter of the difference of the combustor used had a diameter of the light that the stabilisor of 12 mm diameter. Figs 3 and 4 show the stabilisor of 12 mm diameter. Figs 3 and 4 show the results of these experiments, the former giving the variation of the relative value of the turbulent variation of the relative value of the normal velocity of burning, and the latter as a function of the stream of burning, and the latter as a function of magnitude of velocity. It is found that the order of magnitude of the theory of turbulent combustion. The limits of the theory of turbulent combustion.

Card 4/5

S/147/60/000/01/012/018 E022/E535

On the Solution of a Simple Combustion Chamber

flame mantle in the cylindrical combustor were also measured in these experiments, viz. by employing ionization pick-ups as well as by means of direct photography through a window in the combustor wall. These results are compared with the theory and are shown in Fig 5. All the experimental data agree closely with the theory. There are 5 figures and 10 references, 8 of which are Soviet and 2 English.

SUBMITTED: March 16, 1959

X

Card. 5/5

31586 s/124/61/000/011/034/046 D237/D305

11.7200

AUTHORS:

Vlasov, K.P., and Dubrovskaya, O.N.

TITLE:

Determining the temperature of turbulent flames by

optical methods

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 11, 1961, 101-102 abstract 11B679 (Sb. 3-ye Vses. soveshchaniye po teo-

rii goreniya, v. 1, M., 1960, 114 - 120)

TEXT: The authors venture an opinion on the relation between the degree of homogeneity of a turbulent stream of burning mixture and the deviation of temperature (which is measured by spectral line displacements) from the mean temperature of the flame obtained ned by some other method. Nonuniformity of composition of the mix-ture and temperature fluctuations w.r. to time, always results in an increase of temperature which is measured by optical methods based on the measurement of radiant energy. That means that on the average, high temperatures have more influence on the results, than the low ones. The relation is given to determine the mean tem-

Card 1/2

31586 S/124/61/000/011/034/046 D237/D305

Determining the temperature of ...

perature from the results given by optical apparatus. It follows from this relation that the measured mean temperature approaches the mean thermodynamical value with an increase of the wavelength of light. Hence, for turbulent flames, readings obtained in the infra-red range are closer to theoretical than those obtained in the visible, or ultraviolet range. The results are given of the experimental check of the rise of temperature of turbulent flames obtained by spectral line displacement, against those obtained by means of an infra-red pyrometer. It is seen that when the mixing is adequate then the temperature measured by the method of line displacement is close to expected theoretical values except for the regions of high values which can be explained by inadequate mixing in those regions. [Abstractor's note: Complete translation]

Card 2/2

5/024/60/090/03/022/028

E081/E441

26,5000

AUTHORS:

Vlasov, K.P. and Inozemtsev, N.N. (Moscow)

TITLE:

....

The Feasibility of Investigating the Fine Structure of Turbulent Flames by Means of the Resistance

Thermometer Method

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1960, Nr 3, pp 166-170 (USSR)

ABSTRACT:

In Ref 1, a resistance thermometer was used to investigate temperature fluctuations in a turbulent flame. The sensitive element of such a thermometer consists of a fine platinum or tungsten wire. On instantaneously transferring the wire from a medium at temperature T1 the heat balance equation is Eq (1), where m is the mass of the wire, \dot{c} the heat capacity and $\dot{\alpha}$ the coefficient of heat emission. The solution of Eq (1) is Eq (2), where TH is the temperature of the wire, t is time and τ is the time constant of the wire. This equation corresponds to a sudden change in temperature but if in a flame there is a relatively large zone with intermediate temperature, the heat balance is expressed by Eq (3) of which the solution is Eq (4);

Card 1/3

80956 \$/024/60/000/03/022/028 E081/E441

The Feasibility of Investigating the Fine Structure of Turbulent Flames by Means of the Resistance Thermometer Method

is the time of intersection of the front by the wire. The two solutions (2) and (3) are compared in Fig 1. (Change of relative temperature of the wire with time for various ratios of the time of intersection of the front to the time constant of the wire.) With the aid of Fig 1 and 2 (Fig 2: Determination of the errors of finding "defects") the uncertainties of the method used in Ref 1 to detect the "defects" (regions where the curve $T_{H} = f(t)$ deviates from the normal exponential curve (2)) are evaluated. The determination of the mean temperature for a rectangular and a trapezoidal profile (Fig 3) is also considered. Experiments were carried out with a propane-air bunsen flame using a resistance thermometer and the apparatus described in Ref 1. Fig 4 shows some of the temperature records (oscillographic temperature records with a resistance thermometer in the cross-section of a bunsen flame at different traverse velocities W: a - tungsten wire, diameter 15 μ ; b - tungsten wire, diameter 5 μ)

Card 2/3

公司的 1995年 1995年

8/024/60/000/03/022/028 E081/E441

The Feasibility of Investigating the Fine Structure of Turbulent Flames by Means of the Resistance Thermometer Method

and indicates the very considerable effect of the traverse velocity. The effect of the time constant of the wire on the shape of the output wave may be shown by means of the circuit of Fig 5. (Fig 5: a and b -Input and output impulses; B - scheme of model arrangement, 1 - amplitude limiter, 2 - rectifier, 3 - integrating circuit, 4 - resistive load.) Fig 6 shows the input and output pulses of a square and trapezoidal wave with a time constant $\approx 0.5 \times 10^{-3}$ sec, approximately the same as that of the $5\,\mu$ diameter wire used in Ref 1. It is concluded that resistance thermometers with wire >3 - 5 μ diameter are unsuitable for investigating the fine structure of turbulent flames because they do not detect zones with intermediate temperature less than 6 to 10 mm in size. There are 6 figures and 1 Soviet reference.

SUBMITTED:

May 15, 1959

Card 3/3

4

in a resultation in the second second second second

VLASOV, K.P

PHASE I BOOK EXPLOITATION

SOV/5752

- Gorbunov, G. M., Candidate of Technical Sciences, Docent, ed.
- Stabilizatsiya plameni i razvitiye protsessa sgoraniya v turbulentnom potoke; sbornik statey (Stabilization of the Flame and the Development of the Combustion Process in a Turbulent Flow; Collection of Articles) Moscow, Oborongiz, 1961. 169 p. Errata slip inserted. 2,650 copies printed.
- Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR.
- Ed.: K. Ya. Zaytseva, Engineer; Ed. of Publishing House: N. G. Kopylova; Tech. Ed.: V. P. Rozhin; Managing Ed.: A. S. Zaymovskaya, Engineer.
- PURPOSE: This collection of articles is intended for engineers and scientific workers concerned with combustion problems, and for advanced students in related courses in schools of higher technical education.

Card 1/3

。 1987年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,1988年,19

Stabilization of the Flame (Cont.)

SOV/5752

COVERAGE: The collection contains 7 articles describing experimental investigations of the mechanism of flame stabilization and propagation in open and closed turbulent flows. Experimental data on intensity, extent and frequency patterns of turbulence, temperatures, flame ionization, etc., are presented. The investigations contribute to a better understanding of some of the phenomena taking place in a ramjet combustion chamber.
The authors thank V.B. Rutovskiy, I. S. Makarov, A. V. Goryacheva,
V. I. Biteryakova, and Ye. V. Trofimova. References accompany

TABLE OF CONTENTS:

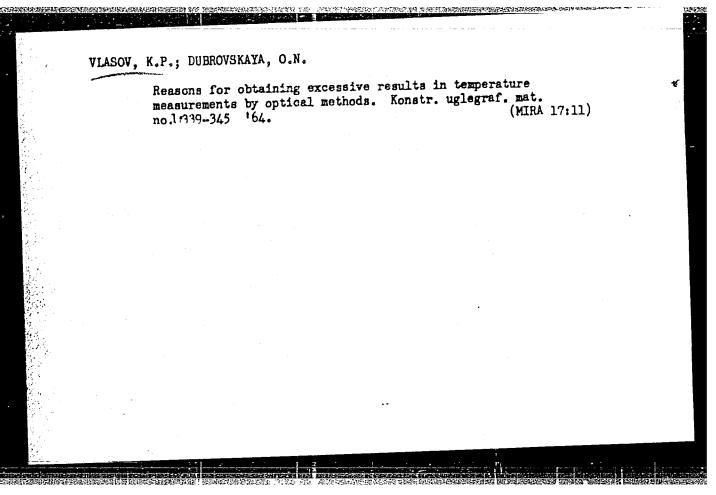
Foreword

3

Solntsev, V. P. [Candidate of Technical Sciences]. Experimental Investigations of Turbulence Parameters in the Center of a Free

Card 2/3

. T	Stabilization of the Flame (Cont.) SOV/5752)
	Gorbunov, G. M. [Candidate of Technical Sciences]. Effect of Turbulence Parameters on the Velocity of Flame Propagation	
	Solokhin, E. L. [Candidate of Technical Sciences]. Investigati of Flame Propagation and Stabilization Behind a Trough-Shaped	31 on
	·	48
	Solntsev, V. P. Effect of Turbulence Parameters on the Combustic Process in a Homogeneous Gasoline-Air Mixture Behind a Stabilizer Under Closed-Flow Conditions	r
	Solntsev, V. P., and V. A. Golubev. Combustion of a Gasoline-Air Mixture Behind Stabilizer Systems	
	Vlasov, K. P. [Candidate of Technical Sciences]. Calculation of a Simple Ramjet-Type Combustion Chamber	109
	Inozemtsev, N. N. Ionization in Laminar Flames	128
		149
	AVAILABLE: Library of Congress	
	Card 3/3 AC/rs 11-6-	m/ec 61



AID Nr. 987-4 11 June

STRUCTURE OF TURBULENT FLAMES (USSR)

VLASOV, K.P.

Dubrovskaya, O. N., K. P. Vlasov, and N. I. Inozemtsev. IN: Akademiya nauk SSSR. Otdeleniye tekhnicheskikh nauk. Energetika i transport, no. 2, Mar-Apr 1963, 214-220.

S/28!/63/000/002/003/003

The structure of turbulent gasoline-air flames was studied at flow velocities of 25 to 150 m/sec and 0.8 to 1.8 excess air in a burner 300 mm in diameter, equipped with a conical flame holder 22 mm in diameter. Simultaneous measurements were made with an ionization gauge, a resistance thermometer, and an infrared pyrometer, and by Schlieren photography and spectrographic recording of radical emission. The results showed that the reaction takes place stepwise in sections having a length Ionization in the individual sections is 4 to 5 of 8-10 mm in the direction of flow. times less than in laminar flames, indicating a basic difference between turbulent and laminar flame mechanisms. The effect of excess air on the chemical reaction rate is less pronounced in turbulent than in laminar flames. The zone of intensive chemical reaction is preceded by a preheating zone which contains combustion products transmitted by turbulent diffusion. The maximum emission of intermediate combustion products corresponds to 82% conversion, rather than the 50% postulated (PV) by the model based on laminar flame pulsations.

Card 1/1

37915

/000/006/003/021

26.2131

Vlasov, Z... AUTHOR:

On the comparation of a uniflow compastion chamber

TITLE: of simple lesign.

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk.42. Silovye ustanovki, no.6, 1962, 20, abstract 426148 (V sb. "Stabilizatsiya plameni i razvitiya protsessa sgoraniya v turbulentr. potoke". M., Oborongiz, 1961,126-

145).

actions to studied, chara objizing the flow of a combustible source in a sylindrical tuoc with a point source of ignition. A critical review is given of certain previous works in which various additional conditions were assumed for the closing of an equation system; the dependence of the combustion zone width (or of the combustion time) and turbulent-flame propagation velocity on the initial parameters is analysed. For the closing

Card (1

S/262/62/000/006/003/021 1007/1207

On the computation of a uniflow

of this equation system the condition suggested by T39H (Tzyan) was adopted while, according to existing concepts based on Shchel-kin's physical model [Abstractor's note: of combustion], the combustion-zone width in turbulent flames is defined as the radius of bustion-zone width in turbulent flames is defined as the radius of bustions. A method is suggested for the measurement of the combustion-zone width according to records of individual flame fluctuations zone width according to records of individual flame fluctuations measured by ionization probes. This method permits the obtaining of the relation between the combustion-zone width and the distance of the relation between the combustion-zone width and the distance of the relation source. Such an approach makes it possible to from the ignition source. Such an approach makes it possible to design the combustion chamber (combustor) by the method of successive approximations (from zone to zone). When calculations are sive approximations (from zone to zone). When calculations are made according to experimental data, use may be made of the law of linear variation of temperature and velocity in the turbulent linear variation of the combustion chamber and the absolute velocity of turbulent combustion, this method being based on ordinary testing data on combustion chambers, e.g. data on variation of

Card 2/3

On the computation of a uniflow ...

S/262/62/000/006/003/021 I007/I207

statistical [Abstractor's note: obviously a misprint, should read statical] pressure along the combustion chamber. Results are presented on the investigation of a combustion chamber of 150 mm diameter and a combustion-section length of 720 mm. Ignition and flame stabilization in the combustion chamber were achieved by during testing both approach-velocity and mixture-composition were varied. The order of magnitude of turbulent-combustion velocity was measured in comparison with the values of fluctuating and normal burning velocities. There are 15 bibl. references.

[Abstractor's note: Complete translation.]

Card 3/3

X

35743 S/124/62/200/003/016/052 D237/D301

11.5000

AUTHOR:

. Vlasov, K.P.

TITLE:

Design of the simplest combustion chamber of the

rectilinear flow type

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 3, 1962, 44, abstract 3B252 (Sb. Stabilizatsiya plameni i razvitiye protsessa sgoryaniya v turbulentn. potoke, M., Oboron-

giz, 1961, 128 - 148)

TEXT: A review is given of the work on solving the problem of flame propagation in a cylindrical tube with ignition by the point source. A method of determining the shape of the flame stabilized in a chamber of the rectilinear flow type, is described. The choice of basic characteristics of the turbulent flame propagation is considered in detail, and those chosen are velocities of propagation of a turbulent flame and widths of combustion zones. The idea behind the proposed design method is to enclose the basic gas-dynamic equations of flow of a combustible mixture in a cylindrical tube with a point igniter by introducing one additional condition - that Card 1/2

Design of the simplest combustion ... S/124/62/000/003/016/052 D237/D301

of dependence of the width of combustion zone on the distance to the igniter. Described are the results of the experimental investigation of the combustion chamber of the rectilinear flow type (diameter - 150 mm, length of the burning part - 720 mm) with a conical stabilizer of 12 mm diameter. Velocity of the incident air stream and composition of the mixture were varied. During the experiment the distribution of static pressure was measured along the length of the chamber. A comparison of calculated and measured positions of the flame jet boundaries was made, and good agreement was obtained. 15 references. [Abstractor's note: Complete translation].

Card 2/2

SAMSONOW, G.V.; KISLYY, P.S.; VLASOV, K.R.

Extrusion of protective sheaths for thermocouples. Ogneupory (MIRA 16:9)

28 no.7:311-312 '69.

1. Institut metallokeramiki i spetsial nykh splavov AN UKrSSR.

ACCESSION NR: AP4019470

5/0133/64/000/003/0216/0218

AUTHORS: Samsonov, G. V.; Reshetnyak, Yu. S.; Vlasov, K. R.

TITLE: Applying thermocouples encased in zirconium diboride for continuous measurement of liquid metal temperature in an oxygen converter

SOURCE: Stal', no. 3, 1964, 216-218

TOPIC TAGS: thermocouple, chrcmel-alumel thermocouple, zirconium diboride protective casing, oxygen converter, liquid metal temperature, continuous temperature measurement

ABSTRACT: The chromel-alumel thermocouples clad in three-layer protective casings of ZrB, were used for a continuous measurement of liquid metal temperature in a converter during the process of oxygen blowing. The protective casings were 15 mm in diameter and 140-150 mm long, with a wall thickness of 2 mm. The thermocouples were installed in the refractory lining of the converter at different distances from the bottom in such a way that their ends protruded into the converter for 22 from the bottom in such a way that their ends protruded into the converter for 22 to 38 mm. These ends were made of 3 layers, one of alumdum, one of ZrB2, and one of aluminum oxide powder poured between the other two layers. ZrB2 was produced by

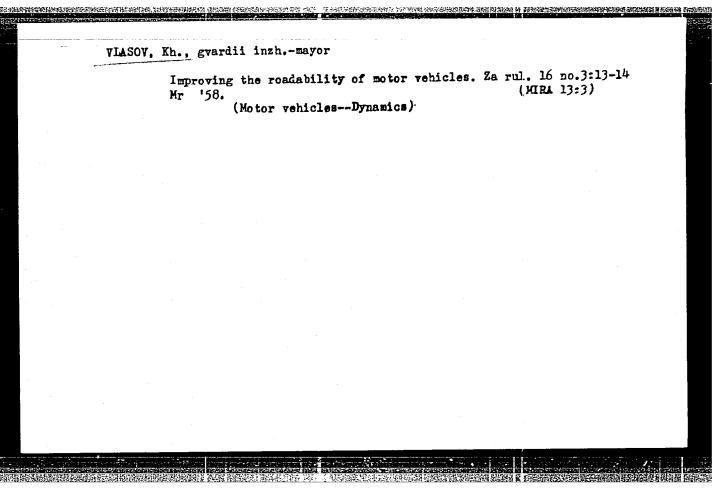
Card 1/2

•	•		••	
ACCESSION NR: AP401947	70		remain and a sure of the sure	
				in en Entre
mixing fine zirconium d	iboride powder with a	starch glue (140 grams	of glue per 1	
kg of ZrB ₂ powder). The pressed and baked at 21 of such protective cost				
of such protective coat process. Orig. art. ha		ially in the automatic	on of the melting	-1
32.0				
ASSOCIATION: none				
SUBMITTED: 00	DATE ACQ: 27	7Wan64		
SUB CODE: ML			ENCL: 00	
DOD CODE: MI	NO REF SOV:	005	OTHER: 000	
er it in the state of the state				
		**************************************	vindy ilsemells has straithest.	11222
		rang katalog di katalog ang katalog di katalog Makatalog di Makatalog di Katalog ang katalog di katalog di katalog di katalog di katalog di katalog di katalo		
Card 2/2				•
				·

SAMSONOV, G.V.; RESHETNYAK, Yu.S.; VLASOV, K.R.

Using thermocouple sheaths of zirconium diboride for the continuous measurement of the temperature of liquid metal in oxygen-blown converters. Stal' 23 no. 3:216-218 Mr '64. (MIRA 17:5)

ACCESSION NR: AP3004262 AUTHOR: Samsonov, G. V.; Kisly-y. P. S.; Vlasov, K. R. TITLE: Forming protective thermocouple caps SOURCE: Ognewpory*, no. 7, 1963, 311-312 TOPIC TAGS: protective cap, thermocouple, press, carbide, boride, silicide, aluminum oxide, zircortum oxide ABSTRACT: A press has been developed for forming one-piece protective caps for thermocouples used in steel and iron smelting. To form a cap, plastic material is placed in cylinder (5) (see Enclosure) and pressed with plunger (9) into the annulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of garbides borides, silicides, aluminum oxide, and zirconium oxide. Orig, art. has: I diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, ANPOSER (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUBMITTED: OO DATE ACQ: 20Aug63 ENCL: OI SUB CODE: MA,ML NO REF. SOV: OOI OTHER: OOO							
AUTHOR: Samsonov, G. V.; Kisly*y, P. S.; Vlasov, K. R. TITLE: Forming protective thermocouple caps SOURCE: Ognewpery*, no. 7, 1963, 311-312 TOPIC TAGS: protective cap, thermocouple, press, carbide, boride, silicide:, aluminum oxide, zircorium exide ABSTRACT: A press has been developed for forming one-piece protective caps for thermocouples used in steel and iron smelting. To form a cap, plastic material is placed in cylinder (5) (see Enclosure) and pressed with plunger (9) into the annulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of garbides? borides, silicides, aluminum exide, and zirconium bride. Orig. art. has: I diagram. (1) ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, AN OSER (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUBMITTED: OO DATE ACQ: 20Aug63 ENCL: OI SUB CODE: MA,ML NO REF. SOV: OOI OTHER: OOO			AFFTC/ASD Ps	8/0131/6	3/600/007/03	11/0312	
SOURCE: Ogneupory*, no. 7, 1963, 311-312 TOPIC TAGS: protective cap, thermocouple, press, carbide, boride, silicide:, aluminum oxide, zircorium oxide ABSTRACT: A press has been developed for forming one-piece protective caps for thermocouples used in steel and iron smelting. To form a cap, plastic material is placed in cylinder (5) (see Enclosure) and pressed with plunger (9) into the annulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides borides, silicides, aluminum oxide, and zirconium oxide. Orig. art. has: 1 diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, AN OSAR (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUBMITTED: OO DATE ACQ: 20Aug63 ENCL: O1 SUB CODE: MA, ML NO REF. SOV: OO1 OTHER: OOO	ACCESSION NRI	AP 3004202		/	,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
TOPIC TAGS: protective cap, thermocouple, press, carbide, boride, silicide; aluminum oxide, zircorium exide ABSTRACT: A press has been developed for forming one-piece protective caps for thermocouples used in steel and iron smelting. To form a cap, plastic material is placed in cylinder (5) (see Enclosure) and pressed with plunger (9) into the annulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides borides, silicides, aluminum oxide, and zirconium bxide. Orig. art. has: I diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, AN 205R (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUEMITTED: OO DATE ACQ: 20Aug63 ENCL: O1 SUB CODE: MA, ML NO REF. SOV: OO1 OTHER: OOO	AUTHOR: Samsor	10V, G. V.; Kisly*y, P	. S.; Vlasov, K.	Re		66	
TOPIC TAGS: protective cap, thermocouple, press, carbide, boride, silicide:, aluminum oxide, zircorium exide ABSTRACT: A press has been developed for forming one-piece protective caps for thermocouples used in steel and iron smelting. To form a cap, plastic material is placed in cylinder (5) (see Enclosure) and pressed with plunger (9) into the annulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides, borides, silicides, aluminum exide, and zirconium exide. Orig. art. has: 1 diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, ANOSER (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUBMITTED: OO DATE ACQ: 20Aug63 ENCL: Ol SUB CODE: MA,ML NO REF. SOV: OOl OTHER: OOO	TITLE: Forming	g protective thermocou	ple caps				· · · · · · · · · · · · · · · · · · ·
TOPIC TAGS: protective cap, thermocouple, press, carbide, boride, silicide:, aluminum oxide, zircorium exide ABSTRACT: A press has been developed for forming one-piece protective caps for thermocouples used in steel and iron smelting. To form a cap, plastic material is placed in cylinder (5) (see Enclosure) and pressed with plunger (9) into the annulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides, borides, silicides, aluminum exide, and zirconium exide. Orig. art. has: 1 diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, ANOSER (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUBMITTED: OO DATE ACQ: 20Aug63 ENCL: Ol SUB CODE: MA,ML NO REF. SOV: OOl OTHER: OOO	SOURCE: Ogneu	pory*, no. 7, 1963, 31	1-312				
ABSTRACT: A press has been developed for forming one-piece protective caps for thermocouples used in steel and iron smelting. To form a cap, plastic material is placed in cylinder (5) (see Enclosure) and pressed with plunger (9) into the annulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides borides, silicides, aluminum exide, and zirconium exide. Orig. art. has: 1 diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov AN OSER (Institute of Metal Ceramics and Special Alloys. Académy of Sciences. Ukrainian SSR) SUEMITTED: 00 DATE ACQ: 20Aug63 ENCL: 01 SUB CODE: MA,ML NO REF, SOV: 001 OTHER: 000)			من المسا	-1da -111	440	
thermocouples used in steel and iron smelting. To form a cap, plastic material in placed in cylinder (5) (see Enclosure) and pressed with plunger (9) into the amulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides borides, silicides, aluminum exide, and zirconium exide. Orig. art. has: 1 diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov AN USER (Institute of Metal Ceramics and Special Alloys. Académy of Sciences. Ukrainian SSR) SUEMITTED: 00 DATE ACQ: 20Aug63 ENCL: 01 SUB CODE: MA,ML NO REF. SOV: 001 OTHER: 000	TOPIC TAGS: pr	rotective cap, thermo, sircorium exide	couple, press,	oarnide,, oo	LIMO , BIII		
thermocouples used in steel and iron smelting. To form a cap, plastic material in placed in cylinder (5) (see Enclosure) and pressed with plunger (9) into the annulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides torides, silicides, aluminum exide, and zirconium exide. Orig. art. has: 1 diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov AN USER (Institute of Metal Ceramics and Special Alloys. Académy of Sciences. Ukrainian SSR) SUBMITTED: 00 DATE ACQ: 20Aug63 ENCL: 01 SUB CODE: MA, ML NO REF. SOV: 001 OTHER: 000	ABSTRACT: A P	ress has been develope	ed for forming of	e-piece prot	ective caps	for	
amulus between the centered hollow needle (4) and the interchangeable inset (2). The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides, borides, silicides, aluminum oxide, and zirconium oxide. Orig. art. has: 1 diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, AN USER (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUBMITTED: 00 DATE ACQ: 20Aug63 ENCL: 01 SUB CODE: MA, ML NO REF, SOV: 001 OTHER: 000	Aleman complete	nged in steel and iron	amelting. To :	corm a cap. P	TWRETC DE CO.	CTOT TIN !	
The head of the cap is formed in the base (12). To allow for passing of air, a steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides, borides, silicides, aluminum exide, and zirconium exide. Orig. art. has: I diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, AN USER (Institute of Metal Ceramics and Special Alloys. Académy of Sciences, Ukrainian SSR) SUBMITTED: 00 DATE ACQ: 20Aug63 ENCL: 01 SUB CODE: MA, ML NO REF. SOV: 001 OTHER: 000	Ing hotwee	n the centered hollow	needle (A) and	tno interchar	Велоте тиве	6 (2)	
steel rod (8) is removed from the hollow needle. Using this press, the authors prepared protective caps of carbides, borides, silicides, aluminum oxide, and zirconium bxide. Orig. art. has: I diagram. ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, ANDOSER (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUEMITTED: OO DATE ACQ: 20Aug63 ENCL: O1 SUB CODE: MA,ML NO REF, SOV: OO1 OTHER: OOO	mha hand of th	a sen is formed in the	n hase (12). To	allow for pa	saing or ar	r, a	
Conjum 6xide. Orig. art. has: I diagram. 1 ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov, AN OSER (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUBMITTED: OO DATE ACQ: 20Aug63 ENCL: O1 SUB CODE: MA, ML NO REF. SOV: OO1 OTHER: OOO	(b)	is memoral from the he	allow needle. U	sing this ore	iss, the gut	DOLB	4
ASSOCIATION: Institut metallokeramiki i spetsial nykh splavov ANDUSER (Institute of Metal Ceramics and Special Alloys, Académy of Sciences, Ukrainian SSR) SUBMITTED: 00 DATE ACQ: 20Aug63 ENCL: 01 SUB CODE: MA,ML NO REF. SOV: 001 OTHER: 000		ctive caps of carmoes	egram. A3	ordep, artimir	OXIUO, u		
of Metal Ceramics and Special Alloys, Academy of Sciences, Ukrainian SSR) SUBMITTED: 00 DATE ACQ: 20Aug63 ENCL: 01 SUB CODE: MA, ML NO REF, SOV: 001 OTHER: 000	prepared prote	OLINO STAN HOUSE T AT		/VI.	NETTER (The	ti tute	14 14 14
SUBMITTED: 00 DATE ACQ: 20Aug63 ENCL: 01 SUB CODE: MA,ML NO REF. SOV: 001 OTHER: 000	conium bxide.	Institut metallokerami	lki i spetsial'n	ykh splavov j <i>A</i>	TIND (TIND		
Loop copie.	conium bxide.	Institut metallokerami	lki i spetsial'n	ykh splavov <i>ja</i> iences. Ukrai	nian SSR)		
Card 1/8/	ASSOCIATION: of Metal Ceram	Institut metallokerami dics and Special Alloys DATE ACQ:	ki i spetsial'n . Académy of Sc 20Aug63	iences, Ukrai ENCL: 01	<u>nian SSR)</u>		
	conlum bxide. ASSOCIATION: of Metal Ceram SUBMITTED: O SUB CODE: M	Institut metallokeramics and Special Alloys DATE ACQ:	ki i spetsial'n . Académy of Sc 20Aug63	iences, Ukrai ENCL: 01	<u>nian SSR)</u>		



BEUS, Aleksey Aleksandrovich; VLASOV, K.A., otv.red.; TARASOV, L.S., red.izd-va; POLENOVA, T.P., tekhn.red.

[Geochemistry of beryllium and genetic types of beryllium deposits] Geokhimiia berillila i geneticheskie tipy berillie-vykh mestorozhdenii. Moskva, Izd-vo Akad.nauk SSSR, 1960.
328 p. (MIRA 13:4)

1. Chlen-korrespondent AN SSSR (for Vlasov). (Beryllium)

VLASOV, Khrisanf Vasiliyevich; TEVTYUKHIN, Ivan Yegorovich; SEREBRYAKOV, Yuriy Fedorovich; GOLOSHCHAPOV, I.M., red.; KONOVALOVA, Ye.K., tekhn.red.

[Driving motor vehicles under difficult conditions] Vozhdenie avtomobilia v slozhnykh usloviiakh. Moskva, Voen.izd-vo M-va obor.SSSR, 1959. 133 p. (MIRA 13:3) (Automobile drivers)

BELYANKIN, D.S., akademik; BETEKHTIN, A.G., akademik; BORISYAK, A.A., akademik; CHIGOR'YEV, A.A., akademik; NALIVKIN, D.V., akademik; SHATSKIY, N.S., akademik; YLASOV, K.V.; ZHEMCHUZHNIKOV, Yu.A.; ORLOV, Yu.A.; FELOROV, S.F.; KUZNETSOV, I.V., red.; MIKULINSKIY, S.R., red.; KUZNETSOVA-YERNOLOVA, Ye.B., red.; KHYUCHKCVA, V.N., tekhn. red.

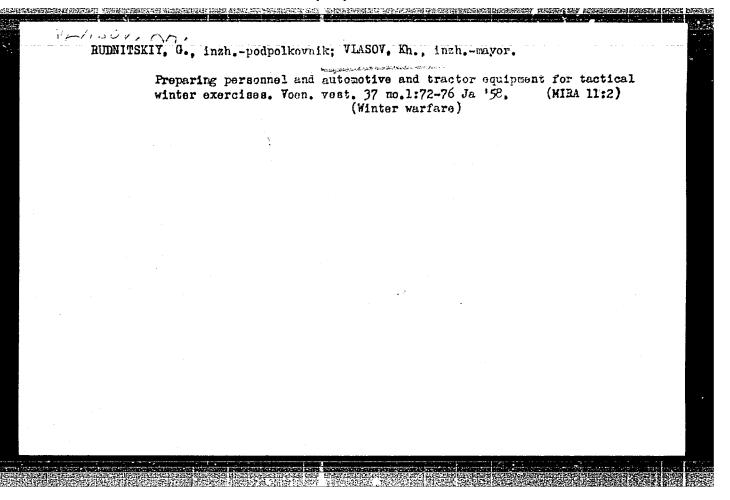
[Russian scientists; sketches about outstanding workers in natural sciences and technology; geology and geography] Liudi russkoi nauki; ocherki o vydaiushchikhsia deiateliakh estestvoznaniia i tekhniki. Geologiia, geografiia. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1962. 579 p. (MIRA 15:3)

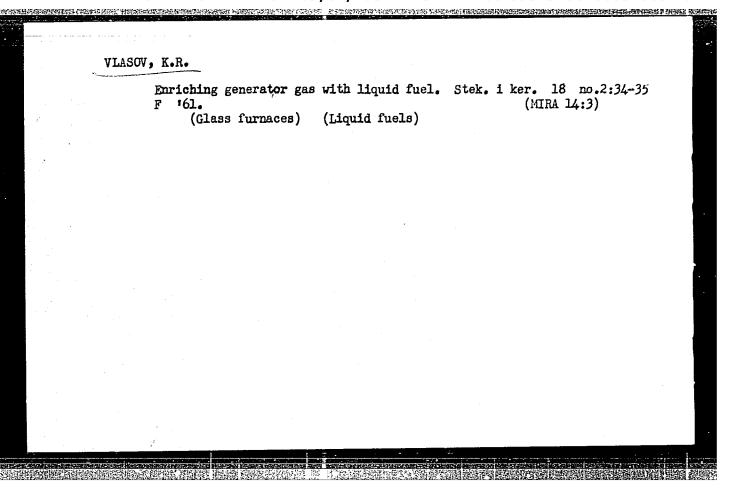
1. Chlen-korrespondent Akademii nauk SSSR (for Vlasov, Zhem-chuzhnikov, Orlov, Fedorov).

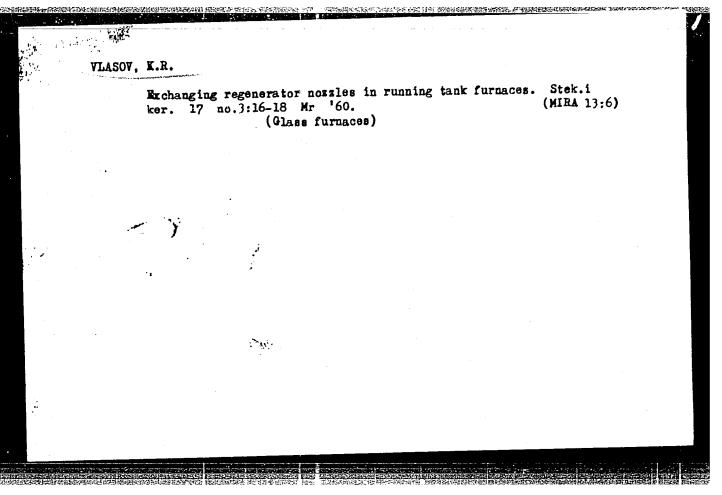
(Geology) (Geography)

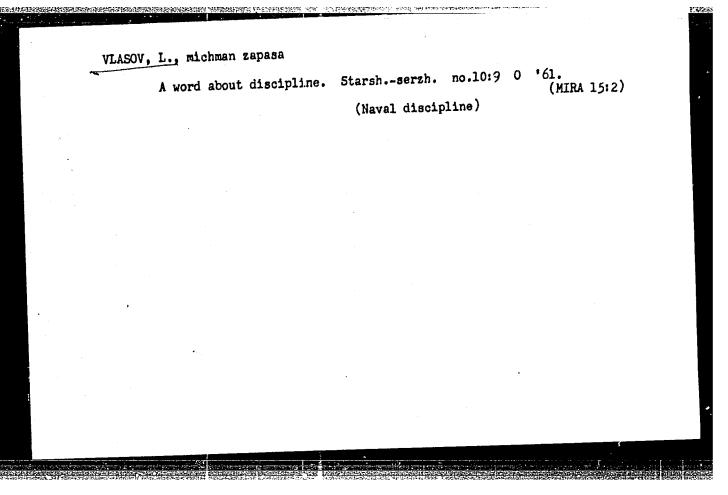
VLASOV, Khrisanf Vasil'yevich; YEVTYUKHIN, Ivan Yegorovich;
SERVERYAKOV, Yurly Fedorovich; OKUNEV, Yu.K., red.

[Motor-vehicle driving under difficult conditions] Vozhdenie avtomobilia v slozbnykh usloviakh. Izd.2., dop.
Pockva, Vocnizdat, 1964. 166 p. (MIRA 17:9)









BOBROV, L.; VASILEVSKIY, V.; VLASOV, L.; DRAGUNOV, E.; KAPUSTINSKAYA, K.; KARELIN, V.; LOSHCHĪLOV, G.; MAKARENYA, A.; MEDVEDEV, Yul.; ROMAN'KOV, Yu.: SENCHEMKOVA, T.; SENCHEMKOV, A.; TRIFONOV, D.; ANTOYUK, L., red.; LESHCHINSKAYA, G., tekhn. red.

[Journey into the land of the elements] Puteshestvie v stranu elementov. [By] L.Bobrov i dr. Moskva, "Molodaia gvardiia," 1963. 366 p. (MIRA 16:10)

